

## Claims

[c1] What is claimed is:

1. An antenna connected to a circuit board for wireless communication, the antenna comprising:  
a radiator used to transmit and receive radio frequency (RF) signals, the radiator being perpendicular to a ground plane of the circuit board;  
a feeding plate stretching out from the radiator and connected to a feed pad of the circuit board, used to transmit the RF signals; and  
a ground plate stretching out from the radiator and connected to the ground plane.

[c2] 2. The antenna of claim 1 wherein the radiator is installed to the side of the circuit board.

[c3] 3. The antenna of claim 1 wherein the radiator is installed above the circuit board.

[c4] 4. The antenna of claim 1 wherein the feeding plate and the ground plate are connected on the same side of the radiator.

[c5] 5. The antenna of claim 1 wherein the feeding plate and the ground plate are connected on different sides of the

radiator.

- [c6] 6.The antenna of claim 1 further comprising an expanding plate stretching out from a side of the radiator.
- [c7] 7.The antenna of claim 1 wherein the feeding plate stretches out from the upper edge of the radiator.
- [c8] 8.The antenna of claim 1 wherein the feeding plate stretches out from the lower edge of the radiator.
- [c9] 9.The antenna of claim 1 wherein the ground plate stretches out from the upper edge of the radiator.
- [c10] 10.The antenna of claim 1 wherein the ground plate stretches out from the lower edge of the radiator.
- [c11] 11.The antenna of claim 1 wherein the antenna is a single frequency antenna, and the length of the radiator is approximately quarter the wavelength of the RF signal transmitted by the antenna.
- [c12] 12.The antenna of claim 1 wherein the circuit board is a printed circuit board (PCB).